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COMMITTEE OF EXPERTS ON THE
TRANSPORT OF DANGEROUS GOODS

Sub-Committee of Experts on the
Transport of Dangerous Goods
(Fourteenth session,
Geneva, 8-18 December 1997,
agenda item 4 (b))

GLOBAL HARMONIZATION OF SYSTEMS OF CLASSIFICATION AND LABELLING OF CHEMICALS

Physical hazards

Threshold for Self-Heating Substances

Transmitted by the Observer from New Zealand

Introduction

At the thirteenth session of the Sub-Committee New Zealand present an informal paper INF.3. This paper outlined a number of concerns relating to the classification of Flammable and Reactive Substances in the proposed Globally Harmonised System. During the Working Group meeting, New Zealand was invited to present formal papers to the fourteenth session of the Sub-Committee.

New Zealand is currently developing Regulations for the Hazardous Substances and New Organisms (HSNO) Act. This Act implements the concepts and philosophy of the Globally Harmonised Chemical Classification System to New Zealand's Domestic Legislation. While developing these Regulations, we discovered some serious problems in applying the current UN transport classification criteria to the controls needed for worker, consumer and environmental safety. The difficulty arises from the UN classification's use of packaging to modify the risk.

As reported in ST/SG/AC.10/C.3/26 the Working Group agreed that the cut off value for self heating substances

Self-heating substances		
Hazard level	**Criteria**	**Test Methods**
High danger	Not applicable	Not applicable
Medium danger	Positive result in a test using a 25 mm sample cube at 140 °C	UN Test N.4 Manual of Tests and Criteria (par. 33.3.1.6.4.3)
Low danger	(a) A positive result is obtained in a test using a 100 mm sample cube at 140 °C and a negative result is obtained in a test using a 25 mm cube sample at 140 °C and the substance is to be packed in packages with a volume of more than 3 m^3; (b) A positive result is obtained in a test using a 100 mm sample cube at 140 °C and a negative result is obtained in a test using a 25 mm cube sample at 140 °C, a positive result is obtained in a test using a 100 mm cube sample at 120 °C and the substance is to be packed in packages with a volume of more than 450 litres; c) A positive result is obtained in a test using a 100 mm sample cube at 140 °C and a negative result is obtained in a test using a 25 mm cube sample at 140 °C and a positive result is obtained in a test using a 100 mm cube sample at 100 °C	UN Test N.4 Manual of Tests and Criteria (par. 33.3.1.6.4.4)

Proposal

It is proposed that this lower cut off level be simplified to:

The threshold or cut off value be simplified to :

A substances is a self heating substance if in the 100 mm cube at 140°C it either spontaneously ignites or experiences a 60°C rise in temperature during the 24 hour testing time.

It is further proposed that this be placed in a hazard level below the currently adopted criteria to clearly differentiate transport risks from risks involved in other parts of the life cycle i.e. storage

Justification

The current values as reported in section 3.2 of the Annex to ST/SG/AC.10/C.3/26/Add.3, are a mixture of thresholds and exemptions (or controls). The Harmonised Classification system is to be based on a substances intrinsic hazardous properties. Much of the current criteria is linked to package size.

The Recommendations for Transport include considerations of the substance as packaged for transport, and do not enable end users or regulatory authorities to identify the intrinsic hazards that might apply separate from packaging. The above proposal removes the uncertainty that packaging considerations may impose as to the intrinsic hazard. The proposed cut off value above would ensure that the potential intrinsic hazard of the substance was easily identified. We envisage that where appropriate, the substance could have a Box 2 type of classification as outlined in ST/SG/AC.10/C.3/68.

The Manual of Test and Criteria indicates that the test temperatures and sizes relates to the self heating temperature of $27m^3$ of charcoal. This is a relatively small volume for storage purposes being only 3m × 3m × 3m. It is questionable whether this is an appropriate standard to base storage contols.

Recommendation

That the working group adopt the proposed additional hazard level.